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Digitalization of Business Processes in Kazakhstani Companies

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Abstract

This article covers the topic of digitalization of business processes of organizations with a client orientation. During the period of mass digitalization, increasing the flow and volume of information, most companies in different sectors of the economy faced the problem of introducing digital technologies. This was especially acute at the beginning of the pandemic - in March 2020. When companies were forced to transfer their activities online or suspend it. The latter led to the loss of the customer base, to an increase in losses and, as a result, the closure of the organization.

Keywords: Digitalization of business processes, Business Processes, Efficiency, Quality Control, Flowcharts, Automation, Optimization, Management, Business Process Analysis, Information Systems.

Introduction

Digitalization of business processes of companies is one of the most urgent problems in Kazakhstan. As the digital world changes rapidly, the volume of information increases, as well as customer requests and behavior. The time of the pandemic has taught companies not to abandon digital technologies and to respond quickly to market changes in order to preserve their niche. In order to gain competitive advantages, increase efficiency and improve business indicators, most

companies make an immediate decision to automate their business processes in a short time and introduce digital technologies to improve the quality of services or goods provided. The purpose of the study is to identify the dependence of improving business processes with the degree of digitalization of the company, as well as the impact of digitalization on the operational activities of companies. External and internal business processes of enterprises are selected as the main indicators. As a research method for testing the hypotheses put forward, a comparative analysis of data from companies from 20 industries for the period 2018-2020 was used. As a result of the study, it was revealed that the digitalization index has a positive effect on the operational efficiency of companies. The main conclusion is that the greatest effect of digitalization is observed among companies with a client orientation, in which the client acts as an impetus in the automation of business processes. Such companies are usually ready for any market changes and have a high digital maturity, otherwise the lack of digital transformations or their slowdown can move such enterprises far back in the ranking. The assessment of the impact of digitalization on the efficiency of work will allow the management of companies to choose the right strategy in matters of digital transformation, which will ensure the competitiveness of the company, increase its financial efficiency and contribute to its development.

Business Process is a set of consistent actions interrelated with each other that require a clear algorithm of application, so that the resources available to companies can be used quickly, efficiently and effectively to obtain the best possible result for all the processes stakeholders. Since the advent of the business processes concept, the latter has often been studied, analyzed, improved and, of course, optimized. (www.up-pro.ru/encyclopedia/biznes-process).

The research hypothesis is the Business Processes Automation as one of the tools to improve employees' performance and the company operation as a whole. The relevance of the business processes study and their optimization is determined by the fact that any company's operation in the modern realities is transformed very quickly (Henriette et al., 2015). This process is a key business trend today: more and more industries are launching a strategy of actively introducing digital tools (digital

transformations) into their business processes. Digitalization restructures business models, changes the approach to conducting internal and external processes. In addition to new technologies, companies need completely new skills, corporate culture, organizational and operational models. Digitalization has a huge potential in terms of increasing efficiency, speed and quality of work, reducing costs, increasing equipment productivity, the efficiency of raw materials, labor and other aspects of business efficiency.

It is argued that the introduction of new technologies directly affects the productivity of enterprises through qualitative changes in operational processes (Fuentelsaz et al., 2016). Moreover, in developing countries, digitalization is considered the leading driving force of economic growth due to increased capital and labor productivity, lower transaction costs and easier access to world markets (Dahlman et al., 2016). Currently, Kazakhstani enterprises are at an extremely low level of digital development (Galimova, 2019).

Table 1. Internal and external processes. Degree of digitalization

<i>Weak digitalization (external processes)</i>	<i>Weak digitalization (internal processes)</i>
The Customer Journey is often disrupted, which leads to customer frustration, incomplete transactions, and process abandonment.	Processes are considered from an internal point of view, they do not think about customers.
Customer expectations are not met, which can lead to the loss of customers.	Metrics are usually internal dimensions.
Customer interactions are not convenient for customers compared to competitors.	Processes are often inefficient and outdated, which leads to waste, inefficiency, errors and poor quality, which may be obvious to customers.
The information is scattered and difficult to access	Information and documentation are often lost during transmission.
<i>Strong digitalization (external processes)</i>	<i>Strong digitalization (internal processes)</i>

The client is in the center of interaction.	High efficiency and productivity increases profits and reduces costs for customers.
Customers receive support throughout the journey.	Processes start from the client's point of view (based on Lean)
Customers can choose their preferred channels at any time.	Improving quality and reducing the number of defects helps to increase customer satisfaction and reduce costs.
Customers have free access to many types of information.	Greater transparency leads to greater accountability and better service
Customers receive support (call center, support center) or engage in self-service (voice response, virtual assistant, mobile applications)	It is easy to see the status of work in progress, providing a better understanding of customer portraits.
Mobile customers receive the same quality of service as stationary customers.	The content is automated, controlled, easily detected and easily moved across departments, which simplifies customer service.
Source (Shakhmametyeva & Torosyan, 2020)	

However, improving and accelerating business processes and automated systems implementing that will allow a bank to be competitive and meet client satisfaction and market requirements, does not mean reducing staff. Such improvement is aimed at reducing the working hours of employees and increasing their efficiency.

Literary Review

The problem of digitalization began to arise as various information systems appeared that somehow help companies in data processing and the speed of rapid response to market changes. However, this problem became acute during the pandemic - in March 2020. "The unprecedented acceleration of the pace of digitalization of all spheres of the economy and the life of the population is one of the most significant trends of the pandemic. The deep introduction of digital technologies has become one of the main mechanisms for adapting the private

sector to doing business in conditions of social restrictions, increased disruptions in production processes and transport flows. The accelerated implementation of digital solutions by state institutions has become a response to the need to provide public services to the population in conditions of limited physical presence. The ubiquity of remote work and training formats allowed us to stabilize the functions of society and prevent a collapse in the level of income and quality of life of the population. As a result, “we have witnessed an unprecedented growth in the volume of the digital economy”, A. Mamin said at the Annual Forum Digital Almaty (Official information resource of the Prime Minister of the Republic of Kazakhstan, 2021).

There is a widespread belief among academics and practitioners that regular actions aimed at optimizing and improving business processes are a major factor in efficiency, economic growth and job creation. Such innovations related to digitalization are often much debated.

In the English Literature, a business process is understood as a set of one or more related operations or procedures that collectively pursue a certain goal of manufacturing or other company activities, usually exercised within a predetermined organizational hierarchy, which reflects a relationship between the stakeholders.

Nowadays, all enterprises, no matter what industry they belong to and what size they are, are actively using business process automation in all operation steps. Each company is interested in enhancing its productivity and reducing labor costs for certain operations, as well as in securing its position in the market. Enhancing such processes is called reengineering. Such a term was first coined by Hammer and Ciampi in *Reengineering the Corporation. A Manifesto for a Revolution in Business* (1997). The authors emphasize Business Process Re-Engineering in every company's life, because there is a need to follow market trends and changes for further prosperity and development.

The authors of “Modeling the Subject Matter Using Enterprise Architect” (2012), suggest reengineering business processes and their optimization by strictly following the sequence of their implementation, as well as by following all the

prescribed steps in the company's developed strategy for implementing such improvements. Moreover, it is noted that the clear compliance with the optimization algorithm and disciplined implementation of each planned step is an opportunity to painlessly and promptly implement new processes (Zolotukhina et al., 2017)

Harrington K.C. Esseling Harm van Nimwegen in a collaboration with Ernst & Young LLP "Optimizing Business Processes", performed many years of research focusing on American and European companies. Relying on the reviewed materials and processes used at that time in the involved companies, the authors disclosed in detail all the process improvement tools, pointed out the bottlenecks that could be encountered in many companies. They also described tools to reduce employees' interference and minimize the bureaucratic factor (Harrington et al., 2002).

The Tutorial "Description and improvement of business processes" by Efimov (2005) addressed the main principles of the process-oriented approach to business process quality management, and described the methodology, classification and documentation of these processes. The author devoted special attention to functional process modeling, as the most promising trend. In this paper, the author has also paid special attention to the improvement and optimization of business processes and he demonstrated options to improve such processes, described the use of updated processes at various stages in various enterprises in detail and displayed the algorithms implementation scheme (Efimov, 2005)

Eliferov & Repin (2011) have jointly raised the topic of developing efficient management tools while business process improvement is of paramount importance among factors and prerequisites that ensure stable economic growth of modern organizations, and is an important objective of scientific research. Setting the existing business processes development process is a constellation of organizational and managerial steps to implement changes within the enterprise: in the nature of production activities, in the organizational structure and other aspects of the organization for the purpose of making it adaptive to the changed operating environment of the enterprise (Eliferov & Repin, 2011). Continuous

improvement of business processes is a basic principle of the process-driven approach to enterprise management.

One of the objectives of the study is to identify whether the degree of digitalization of the company affects the metrics of its effectiveness in comparison with other companies, and if so, how exactly. Digital maturity has become a defining element in corporate competition (Manyika et al., 2015). McAfee and Brynjolfsson argue that competition in industries is becoming more dynamic due to successfully implemented digital systems, while firms that are unable to adapt properly and in a timely manner risk falling behind and becoming uncompetitive (Fitzgerald et al., 2013). Ignoring a new technological innovation in our time can have far-reaching consequences for the future competitive environment of the firm (Manyika et al., 2015). Thus, technologies have changed traditional competition, and the gap between leaders and laggards has increased. Manyika et al. and Yoo state that digitalization opens up new opportunities for companies, increases work efficiency, expands innovative boundaries and allows for better allocation of resources (Fuentelsaz et al., 2016). This is confirmed by Fuentelsaz et al., who believe that the introduction of new technologies directly affects the productivity of the company through changes in the production process itself (Lieberman & Montgomery, 1988). At the same time, already in the 80s, Lieberman and Montgomery clearly stated that technological leadership is one of the main factors providing the advantages of a pioneer, which often lead to an increase in future profitability (Scott et al., 2017). Based on data from SWIFT, a global provider of data security services, reliable evidence has been derived that investments in technology have a positive and significant impact on profitability and productivity in the long term (Eistert et al., 2013) the digital retail giant Amazon uses advanced algorithms that show customers products based on their consumer portraits and adjust prices based on predictive calculations to increase sales and profits. In addition, retail banks use automated digital systems, such as mobile channels and Internet presence, to increase paperless work flows and reduce costs (Eistert et al., 2013). Another example of how digitalization can increase efficiency is the case of the American

automotive corporation Tesla inc.: the company is able to update the software of its electric vehicles without the help of the car owner himself (Kessler, 2015).

The main idea of all studies on the digitalization of business processes is to demonstrate to company managers by real examples what key indicators of the company will be improved after the introduction of information systems and automation of business processes: productivity, revenue, reducing employee time costs, etc. As a result, the study documents a clear and positive impact of digitalization on productivity. Such studies reduce the time for analyzing business processes, which will allow the company to reduce the time for preparatory work and determine a clear algorithm of actions to improve its business processes. It is important to note that the automation of business processes is not directly related to the reduction of manual labor. On the contrary, such improvements lead to an improvement in the skills of the company's employees.

The key idea of all business process studies is to identify a business process or a set of business processes to further decompose them, if necessary. Such actions reduce the time to analyze business processes and their shortening. This will enable the company to determine the importance of a particular operation, thereby reducing the employee's time or automating it. It is important to note that the business process automation is not directly associated with a reduction in manual labor. On the contrary, such improvements lead to an improvement of the company's employees' skills.

Methodology

Today, there are many methods of studying the digitalization of business processes. The theoretical basis of the conducted research was the scientific works of modern authors on the issues of digitalization of the national economy in the conditions of the spread of the Covid-19 virus. In the course of the study, comparative analysis, the method of generalization, the abstract-logical method was used.

Key Findings & Debates

The coming pandemic gave a powerful impetus to digitalization and transformation of the economy. Self-isolation stimulated enterprises to switch to a remote format of work and quickly develop channels and services for building a business online. The current situation in the economy has formed a new experience and increased the penetration of digitalization in the lives of users. There is a rapid growth from the transformation, which can be estimated using the BDI index. (Makarkin, 2020).

The BDI Business Digitalization Index integrates five private indexes (Table 2):

- Channels of the transmission and storage of information – the use of cloud technologies, enterprise email, instant messengers, automation systems, etc.
- Integration of digital technologies – level introduction of the company's technologies such as artificial intelligence, Internet of things, 3D printing, the use of online documents, electronic documents, etc.
- The use of Internet tools for the promotion and development of the company.
- Information security – the introduction of a culture of digital information protection, the use of specialized antivirus programs.
- Human capital – involvement of management in self-development and staff development in the field of digital technologies.

It takes time for the development of digital culture in the business processes of companies, and therefore, despite the growth of the business digitalization index, a value of 50 points indicates that the business is only half ready for the figure. At the same time, only 11% of companies have a high level of digitalization. Among medium-sized businesses, the share reaches 20 %, among sole proprietors-10 %, among micro and small enterprises-12-1 %.

Table 2. Business Digitalization Index (BDI) (according to KazData)

Indicator	2019,%	2020, %
Business Digitalization Index (BDI)	45	50

Private indexes		
Channels for transmitting and storing information	57	59
Integration of digital technologies	27	58
Using Internet tools	52	57
Information security	54	41
Human capital	36	33

In the context of a difficult epidemiological situation and the transition of many companies to remote work, the level of digitalization of enterprises is particularly relevant. There is an understanding among entrepreneurs that digital technologies today are the key to the viability and success of a business. However, not all business representatives were able to quickly rebuild their business processes to a remote format of work: those who did not have time to do this, today suffer losses.

According to a study by the IDF Eurasia group, which was attended by 12 thousand respondents across Kazakhstan, at the beginning of the pandemic, 50% of the surveyed entrepreneurs began to conduct business on the Internet. Another 45% had implemented an online service by May last year.

Even after the quarantine restrictions were relaxed and the entrepreneurs returned to their normal working hours, they continued to develop alternative sales channels. Delivery, the ability to order goods and services directly on the site, chatbots for communicating with customers have been added to advertising in search engines. In general, the work of the business has become more automated. In addition, there was some transformation of the advertising market. Due to the high cost of the usual advertising formats and their low efficiency, many companies are increasingly choosing digital or advertising on the Internet, 100% of respondents said (Yes, 2010).

Currently, the number of companies using digital data transmission channels has increased, such as corporate mail (from 48 % to 56 %), cloud solutions (from 46 % to 52 %) and customer automation systems (from 23% to 33 %). Companies in large

cities of Kazakhstan are more actively using these channels than businesses in the regions (Table 3).

Table 3. Channels for promoting channels and services on the Internet (according to KazData)

Indicator	2019,%	2020, %
Contextual advertising	44	65
Advertising in social networks. networks	34	58
Banner advertising	32	41
Paid advertising on social networks	20	36
Advertising video on the Internet (YouTube, COM)	11	18
Lead Generation (CPA networks) Special	4	11
projects with bloggers	5	10

The Internet coverage of companies for doing business reached 94 % (in 2019 – 92 %). The transition of companies to electronic document management continues: 81 % of companies have abandoned paper document management partially or completely. New platforms for the exchange of documents began to appear, both between companies and with government agencies. All information services have switched to an online format, and public services are reaching a new level.

Many companies are willing to switch to online communication with customers and partners. The share of managers who believe that it is only necessary to communicate with clients or partners in person has decreased (from 38 % to 30 %). Social networks and messengers are actively used to interact with customers.

Companies most often use such special promotion tools as contextual advertising (65 %) and advertising in social networks (58%). In 2020, they began to choose these tools more often (in 2019, 44% and 34% of SME representatives used them, respectively). Facebook Instagram and Facebook are most often used by

entrepreneurs in Moscow to promote their business, and VK.com it remains for regional organizations (Table 4).

Table 4. Social networks used by entrepreneurs for promotion (according to KazData)

Indicator	On average in Kazakhstan (in %)
VK.com	73
Instagram	71
Facebook	50
Classmates	31
Twitter	15
YouTube	14

Confidence in banks as providers of training in the field of digital tools is growing: the share of those representatives of SMEs who believe that the bank cannot conduct such training has decreased (from 35 % to 27 %). 2020 was the year of mass digitalization of the banking industry. Banks that managed to build their own digital platforms by the beginning of the epidemic were instantly among the leaders. After them, customers also rushed to digital, and now digital, rather than "traditional" services, have become the norm. Relationships with banks now do not imply a visit to the office. To use financial services, it is enough to pick up a smartphone. And now the banks that have bet on digitalization are reaping the fruits of their foresight, planning to close some offices for 2021. Such financial organizations have an extensive base of customers who use their services remotely.

In Kazakhstan, those banks whose services were adapted to the figure and were already provided online were also on top. Moreover, some of them have gone beyond the usual and integrated their products into public services (Musrepova, 2021)

The Bank guarantees the issue of correct identification of the person. The security issue in the STB is higher than the average on the market. Today, the population speaks positively about the opportunity to receive services in an online format. Citizens of Kazakhstan living outside the country will now be able to conclude or terminate a marriage, register the birth of a child, change their name, surname, patronymic and get a death certificate using eGov. The finished document is issued at the embassy or consulate of Kazakhstan, abroad. We have brought the most popular services among our fellow citizens living abroad to the online format. Now Kazakhstanis will be able to issue the necessary documents through eGov and receive them without leaving their country of residence. The services were implemented with the involvement of embassies and consulates of Kazakhstan in almost 20 major countries of the world. The Internet saved the world during the pandemic. The population felt this for themselves, like no one else (Official information resource of the Prime Minister of the Republic of Kazakhstan, 2021).

The communications industry showed an increase of 8.6% by the end of the year (880 billion tenge). 5214 villages are provided with mobile Internet, but in 1200 villages there are still questions about the speed of the Internet.

In 2021, work on improving the quality will continue. To do this, 286 villages of Kazakhstan will switch to 3G/4G, 80 villages will switch from satellite transmission to ground infrastructure and the quality of mobile broadband will improve in 255 villages (Official information resource of the Prime Minister of the Republic of Kazakhstan, 2021).

Conclusion

In conclusion, this article summarizes the following important points in the digitalization of business processes of companies in different industry affiliations.

1. Kazakhstani companies have begun to use digital technologies and automated information systems more often to optimize business processes, in order to improve their main economic and operational indicators;

2. The share of entrepreneurs who have started their own websites for the convenience of doing business and improving customer service has increased (from 33 % to 53 %);

3. There is a growing interest in various cloud solutions for storing, sending, analyzing and optimizing company data. The introduction or application of such information systems contributes to the speed of primary data processing, automation of some internal and external communications of the company, which subsequently leads to an increase in the efficiency of each division of the company and its competitiveness in the market. At the same time, such tools are not expensive, but on the contrary, they encourage entrepreneurs to use them.

To further increase the growth of digitalization of business and the economy of Kazakhstan, as well as to implement the state program "Digital Kazakhstan", it is necessary:

1. To increase the level of knowledge and skills in the digital environment of personnel and managers of organizations;
2. Strengthen state support in the form of budget allocation for the digitalization of business;
3. To increase the level of information security at enterprises of various sizes and forms of ownership.

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